Acacia, 313, 368, 371	Agabus (continued)
Acciavatti, R. E. (see Kurczewski, F. E.),	velox, 113
28, 33	verus (= clavicornis), 108
Achillea, 26	Agaporus, 113
millefolium, 16, 20, 29	Agassiz, J. L. R., 321, 419
Acilius, 110	Agelena labyrinthica, 258
fraternus, 110	Agoni, 174, 175
mediatus, 110	Agonini, 173-214, 215
semisulcatus, 110	Agonum, 173, 174, 175
Aconitum, 232	baroni, 189
septentrionale, 143	(Platynus) bilimeki, 213, 215, 216
acridids, 20, 23, 24	cavatum, 191
Acroceridae, 254	chihuahuae, 191
Acrogeniodon, 345	(Hemiplatynus) chihuahae, 191
bedeli, 345	consulare, 192
Aculeata, 33, 142, 145	curtipenne, 201
Adelges abietis, 97	decentis group, 174, 175
lariciatus, 96	dominicense, 195
Adephaga, 423	euprepes, 196
Agabini, 113	harfordi, 204
Agabus, 99, 106-108, 113	hypolithos group, 174, 175
ajax, 108	infidum, 203
ambiguus, 107	larvale group, 174, 175
anthracinus, 108	leptodes, 198
arcticus, 108	logicum, 199
bicolor, 107	lymphaticum, 203
browni, 113	morelosense, 203
canadensis, 107	ovatulum, 205
clavatus (= antennatus), 108	perleve, 206
colymbus, 106, 113	pinalicum, 200
confinis, 107	puncticeps group, 174
congener, 107	umbripenne, 213
discolor, 107	Agromyza, 240
disintegratus, 107	heraclei, 240
hudsonicus, 113	Agromyzid, 220, 242, 243
infuscatus, 107	miners, 3
inscriptus, 107	
kenaiensis, 108	Agromyzidae, 3-8, 219-253, 254 Agromyziden, 8, 241, 242, 243
minnesotensis, 108	
nigroaeneus (= erichsonii), 108	Agromyzinen, 8
ontarionis, 108	
phaeopterus, 107	Alder, H., 66, 95
pseudoconfertus, 108	Allen, P., 6, 8, 225, 229, 233, 234, 235, 241
punctulatus, 106	Allocinopus, 277, 280, 284-285, 389, 405,
semipunctatus, 107	440, 443, 472
seriatus, 106	angustulus, 285
sharpi (= falli), 107	castaneus, 285
	latitarsis, 285
subfuscatus, 107	ocularis, 285
triton, 106	sculpticollis, 284, 285

simplicior, 203

suffectus, 192

Allocinopus (continued) Ander, von Kiell, 116, 140 smithi. 285 Anderson, R. D., 113 Alluaud, C., 344, 345 Andrews, H. E., 287, 344, 345, 346, 347, 419 Alnus, 16, 21, 24, 28 Angelica, 8, 219, 220, 221, 222, 226, 229, 231, tenuifolia, 58 232, 234, 235, 238, 240, 243 Alpinobombus, 115, 117, 121, 124, 126, archangelica, 220, 231, 234, 240 132, 142 arguta, 240 Alysiinae, 242 atropurpurea, 226 Alvsson, 21, 27 decursiva, 235, 240, 248 triangulifer, 15, 21, 27 genuflexa, 231, 234, 252 Alvssonini, 27 kiusiana, 236 Amara, 283, 348, 354, 375 lucida, 231, 234, 253 Amathusiidae, 47 miqueliana, 232 Amelanchier alnifolia, 58 palustris, 221, 239, 240 amino acids, 140, 145 polyclada, 232, 236 Ammophila, 13, 20, 25-26, 30, 32 razulii. 235 azteca, 14, 22, 25-26, 31, 33 sylvestris, 229, 231, 234, 235, 239, 240, 252 mediata, 15, 26 Anisochirus, 278 strenua, 15, 26 alluaudi, 278 Ammophilini 25-26, 31 Anisodactyli, 276 Amphasia, 281-282, 378-379, 380, 394, 395, Anisodactylidae, 276 396, 397, 398, 399, 406, 441, 444, 473 Anisodactvlides, 276 fulvicollis, 378, 380 Anisodactylina, 264, 267, 268, 269, 271, 275. interstitialis, 378, 380, 467, 468, 471 276, 278, 279, 344, 378, 379, 384, 385, 401, sericeus, 379, 467, 471 403, 404, 405, 406, 407, 435, 440, 441, 442, Anacolpodes recticollis, 208 443, 444, 472, 473, 476 Anadaptus, 269, 282, 283, 284, 373-374, contemporary zoogeography of the subtribe. 395, 396, 398, 406, 435, 441, 444, 473 403-407 Anchomenus, 192, 200, 204 evolutionary trends and convergences, (Platynella) baroni, 189 397-399 brullei, 190 key to the genera, 279-284 cavatus, 191 key to the subgenera, 279-284 chevrolati, 203 phylogeny of the genera and subgenera. concisus, 192 388-397 consularis, 192 Anisodactylinae, 276 (Plantyus) curtipennis, 201 Anisodactylines. dominicensis, 195 classification, evolution and zoogeography. (Plocodes) guerrerensis, 214 267-480 harfordi, 204 Anisodactylini, 276, 426 (Platynella) infidus, 203 Anisodactylitae, 276 (Platynella) logicus, 199 Anisodactylites, 276 (Plocodes) longiceps, 201 Anisodactyloid, 388, 389, 390, 392, 393, 394, lymphaticus, 203 395, 397, 399, 435, 466, 472, 473, 476, 478, (Platynella) morelosensis, 203 479 nugax, 203 Anisodactylus, 267, 268, 271, 274, 278, 283, ovatulus, 205 284, 295, 309, 341, 348-349, 349-351, 352, pinalicus, 200 355, 356, 374, 375, 376, 377, 382, 396, 398,

401, 402, 404, 405, 406, 424, 425, 426, 435,

441, 443, 473, 475, 480

Anisodactylus (continued) Anisodactylus (continued) abaculus, 349 hispanus, 351 aethions, 369 intermedius, 354, 470 agricola, 350 karennius, 350, 351 alternans, 374, 398 kempi, 369 amaroides, 375, 376, 468, 470 kirhvi. 348, 350 amplicollis, 349 laetus, 266, 267, 268, 376, 377, 468, 470 anthracinus, 356, 357, 358, 366-368, limbatus, 342 369, 398, 403, 414, 416, 417, 446, loedingi, 349, 350, 351, 468, 470 449, 450, 464, 475, 480 longicollis, 364 antoinei, 351 mandschuricus, 349, 354 arizonae, 320 marginatus, 369 atricornis, 351 melanopus, 350 bervllus, 361 merula, 356, 358, 365, 367, 368-370, 371, binotatus, 277, 278, 350, 351, 468, 470, 372, 402, 403, 413, 414, 416, 417, 446, 471 449, 457, 464, 475, 480 breviceps, 364 metallescens, 349 caenus, 375, 376, 470 modicus, 363 californicus, 348, 350 nemorivagus, 350, 351 carbonarius, 349, 350, 351, 356 nigerrimus, 350 consobrinus, 350, 396 nigricornis, 351 convexus, 367 nigrita, 350 crassus, 368, 369 nivalis, 374, 467 darlingtoni, 267, 356, 357, 358, 367, oblongus, 365 370-371, 403, 414, 415, 416, 446, obscuripes, 349 450, 456, 463, 475, 480 obtusicollis, 349 dejeani, 267, 268, 352, 353, 468, 469, ochropus, 343 470 opaculus, 354, 355, 356, 357, 358-360, depressus, 307 402, 413, 414, 415, 417, 446, 449, 450, dilatatus, 366, 367 456, 464, 475, 480 discoideus, 373, 374, 396, 398 overlaeti, 343 dulcicollis, 355, 356, 357, 359, 360, ovularis, 356, 358, 361, 363, 366, 372, 398, 361, 362-363, 372, 398, 402, 413, 403, 415, 416, 417, 446, 449, 457, 465, 414, 415, 417, 446, 449, 450, 451, 475, 480 457, 465, 475, 480 paulus, 359 ellipticus, 362, 363 peropacus, 364 elongatus, 362, 363 picinus, 337 furvus, 348, 350 pinguis, 368, 369 gravidus, 368, 369 pitychrous, 374 haplomus, 357, 363-364, 367, 370, poeciloides, 353, 468, 470 372, 403, 414, 415, 416, 417, 438, porosus, 374, 398 446, 449, 456, 466, 475, 480 propinguus, 351 harpaloides, 354, 355, 356, 357, 359 pueli, 350 360-361, 363, 372, 398, 402, 414, punctatipennis, 267, 268, 351, 352, 470 415, 416, 417, 446, 449, 450, 457, rotundangulus, 373, 374, 467, 468, 469 458, 464, 475, 480 rufus, 292 harrisi, 350 rusticus, 356, 357, 358, 364-366, 367, 372, hauseri, 350, 351 398, 403, 414, 416, 417, 446, 449, 450, heros, 352, 353 456, 465, 475, 480

Anisodactylus (continued) Aphididae, 92 sadoensis, 351, 352 Aphroteniinae, 387, 420 sanctaecrucis, 374 Apidae, 134, 140, 142, 143, 144, 145 sayi, 309 Apis arctica, 115 schaubergi, 349 mellifera, 257, 258 semirubidus, 372 mellifica (= A. mellifera), 258 shibatai, 351 Aplocentrus, 283, 375-376, 377, 396, 406, signatus, 350, 351 441, 444, 473 similis, 349, 350 Arachnid, 140 sjostedti, 346 Arachnida, 144 sulcipennis, 369 Araneae, 141, 145 texanus, 355, 356, 357, 361-362, 402, Arctagrostis latifolia, 117 414, 415, 416, 446, 449, 450, 465, arctic insects, 32, 33, 140, 143 475, 480 Arnica alpina, 136 tricuspidatus, 349, 350, 351 arthropod visual systems, 257-258 tristis, 365 Asahina, E., 32 verticalis, 374, 375, 467, 471 Ashlock, P. D., 382, 419 virens, 353 Ashmead, W. H. 58, 59, 95 viridescens, 373, 374 Asilidae, 254 wolcotti, 369 Askew, R. R., 62, 63, 71, 83, 90, 95 xanthopus, 340 aspen, 16, 25 zabroides, 344 Astata, 22-23, 32 Anisostichus, 282, 338-339, 388, 391, 392, nubecula, 14, 20, 21, 22-23, 31 397, 406, 435, 440, 443, 472 Astatinae, 22-23, 31, 34 amoenus, 338, 339, 391 Auclair, J. L. 134, 140 laevis, 339, 391, 467 Auffenberg, W., 409, 419 octopunctatus, 339, 391 Axelrod, D. I. 301, 321, 408, 409, 411, 415. posticus, 339, 391 416, 419 Anisotarsus, 267, 268, 269, 273, 274, 281, Ayres, K. D., (see Kinsey, A. C.), 58, 65, 97 289, 290, 292, 293, 294, 295-300, 304, Azetecarpalus, 419 338, 339, 374, 375, 390, 393, 399, 400, Baker, H. G., 31, 32 403, 405, 406, 407, 408, 409, 410, 412, Ball, G. E., 41-43, 263-264, 270, 355, 378, 413, 414, 422, 435, 440, 443, 445, 447, 387, 409, 414, 419, 420 448, 450, 452, 453, 454, 458, 459, 460, Ballion, E., 351 461, 472, 474, 479 Barbula icmadophila, 120 contemporary zoogeography of the Barr, T. C., Jr., 174, 176, 195, 202, 207, 212, 213, 214, 215 subgenus, 407-409 historical zoogeography of the subgenus, Barypina, 387 Basilewsky, P., 278, 287, 337, 338, 341, 342, key to the north american species, 343, 344, 345, 350, 405, 420 297-300 Bassett, H. F., 65, 95 Bates, H. W., 188, 189, 190, 191, 192, 193, 194, phylogeny of the new world species, 399-402 195, 196, 197, 198, 199, 200, 201, 202, 203, Anthomyiidae, 254 204, 205, 206, 207, 208, 209, 210, 211, 212, Antoine, M., 419 213, 214, 215, 276, 285, 286, 289, 296, 298, Aoki, K., 32 299, 300, 302, 308, 310, 311, 314, 318, 322, 323, 324, 325, 327, 329, 330, 331, 332, 333, Apatelus, 339 Apator (= Agabus) bifarius, 108 334, 335, 336, 344, 345, 346, 349, 350, 351, aphid, 24, 96 374, 420

Batrachion, 321, 322 Bombus (continued) chalconatum, 322 agrorum, 115, 126, 140, 141, 142 rana, 322 alpinus, 116, 144 rufipalpum, 322 arcticus, 115 Batrachium, 321 balteatus, 116, 124, 125, 138 Bedel, L., 420 (Alpinobombus) balteatus, 132 bees, 27, 33, 140, 143, 145 fervidus, 144 beetles, 20 hyperboreus, 115-157 Beiger, M., 229, 231, 234, 235, 237, 238, (Alpinobombus) hyperboreus, 146 241 (Alpinobombus) hyperboreus clydensis, 145 Běliček, J., 47-48, 261-262 hypnorum, 144 Bembidion, 386 inexpectus, 138, 145 Berland, L., 66, 95 (Bombus) lucorum, 119 Bertram, G. C. L. 131, 140 medius, 126 Besbicus mirabilis, 88, 96 (Pyrobombus) melanopygus, 132 Betula, 16, 21 (Pyrobombus) mixtus, 132 papyrifera, 58 polaris, 115-157 Beutenmuller, W. 59, 65, 95 (Alpinobombus) polaris, 146 Bidessini, 114 (Pyrobombus) sitkensis, 132 Bidessus, 101-102 (Pyrobombus) sylvicola, 126, 132 affinis, 101 Bouché, P. F., 240, 241 flavicollis, 101 Brachinida, 422 granarius, 102 Brachinus, 382, 409 Bird, R. D., 99, 113 Brachycera, 242 Braconidae, 232, 242 Blackburn, T., 289, 290 Blackwelder, R. E., 175, 188, 189, 190, Bradycellina, 388 191, 192, 193, 194, 195, 196, 197, 198, Braendegaard, J., 116, 140 199, 200, 201, 202, 203, 204, 205, 206, Braschnikow, W. C., 235, 238, 239, 240, 241 207, 208, 209, 210, 211, 212, 213, 214, Breed, W. J. (see Elliot, D. H.), 388, 422 215 Bremidae, 142 Blair, K. G., 63, 65, 67, 68, 71, 73, 75, 88, Brennan, J. M., 161, 163, 164, 166 95 Brian, A. D., 121, 127, 132, 134, 137, 140, 141 Blair, W. F., 409, 420 Brinck, P., 116, 117, 121, 134, 138, 141 Blair, W. G., 412, 420 Brischke, C. G. A., 233, 235, 241 Blanchard, C. E., 203, 215 Britton, E. B., 387, 420 Blatchley, W. S. 295, 306, 309, 318, 420 Bromeliads, 313, 334 blattids, 23 Broscidae, 419 Boheman, C. H., 342 Broscina, 387 Bolivar y Pieltain, C., 174, 178, 189, 190, Broscine, 387, 390 200, 209, 213, 215, 216 Broscini, 386, 387, 419 (see Barr, T. C., Jr.), 174, 213, 215 Broun, T., 284, 420 Bolivaridius, 173 Brown, W. J., 99, 113 ovatellus, 195 Brucella abortus, 255 Bombias, 126, 142 Bruggeman, P. F., 116, 127, 134, 138, 141 Bombidae, 140 Brullé, G. A., 322, 420 Bombinae, 145 Brundin, L., 270, 382, 383, 386, 387, 420 Bombini, 115-157 Bryum, 117, 120 Bombus, 115, 116, 126, 137, 138, 141, Bugbee, R. E., 59, 68, 69, 95 142, 143, 144 bugs, 20

Buhr, H., 3, 8, 56, 95, 229, 231, 235, 238, 239, 241 Bukatsch, F., 134, 141 bumblebee, 34, 141, 142, 143, 144, 145 honey, 143 Buquet, J. B. L., 352 Burdick, N. A. (see Kurczewski, F. E.), 28, 33 Burgeon, L., 338, 342, 343, 344 Burks, B. D. (see Krombein, K. V.), 24, 26, 33, 59, 97 Burton, J. J. S. (see Pechuman, L. L.), 162, 166 Butler, C. G. (see Free, J. B.), 132, 135, 138, 142 butterflies, 32, 33 Calcidoidea, 75, 97 Callan, E. McC., 65, 66, 67, 75, 95, 96 Callidina, 423 Calliergon giganteum, 120 Callimome, 96 Callimomidae, 96 Callirhytis auercussuttoni, 97 Calosoma, 386 Caltagirone, L., 70, 71, 96 Cameron, R. S. (see Johnson, N. E.), 318, 366, 423 Camnula, 24 Campylium arcticum, 117, 120 Carabici, 40, 425 Carabidae, 35-39, 40, 173-214, 215, 216, 217, 263, 267-480 Carabiques, 216 Caraboidea, 40 Carabus binotatus, 348, 349 etruscus, 380 germanus, 381 Carboniferous, 386 Cardamine pratensis, 117 Carex, 58, 318 aquatilis, 120 aquatilis var. stans, 117 Carpenter, G. D., 116, 141 Carret, A., 380, 381, 420 Casey, T. L., 40, 189, 192, 199, 201, 203, 216, 295, 305, 306, 307, 311, 312, 314, 317, 320, 349, 350, 355, 358, 359, 360, 362, 363, 364, 365, 366, 367, 369, 372,

373, 374, 379, 420, 421

Cassione tetragona, 136, 156 Castelnau (de Laporte), F. L. N. C., 286, 287, 288, 289, 290, 296, 421 Cataglyphis bicolor, 257, 258 Caucalis, 238 cecidology, 55, 96 Cecidomyiidae, 56 Celtis, 98, 321 Cenogmus, 280, 287-288, 389, 390, 405, 435, 440, 443, 472 castelnaui, 287, 288, 466, 467, 468, 471, 472 interioris, 288 opacipennis, 288 Cephalogyna, 349, 350 loedingi, 350 Cerastium, 136 beeringianum, 117 Ceratina, 34 Cercerini, 27-28, 32, 34 Cerceris, 20, 27-28, 34 nigrescens, 20, 28, 31 nigrescens nigrescens, 15, 21, 27-28 Ceroptres, 62, 88 chalcid-flies, 96 chalcidoid Hymenoptera, 94, 98 chalcis fly, 98 Chara, 104 Chaudoir, M. de., 188, 189, 190, 191, 192, 193. 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 216, 288, 289, 290, 295, 296, 298, 299, 300, 307, 321, 322, 337, 338, 342, 345, 346, 357, 362, 363, 421 Chernov, Y. I., 116, 141 Chevrolat, L. A. A., 216, 289, 290, 321, 322, 421 Chironomid, 387 Chironomidae, 254 Chorthippus curtipennis, 24 Chlorochroa uhleri, 22 chrysidid wasps, 21, 22 Chrysopa vulgaris, 257 Chrysops, 161-171 aestuans, 161, 165, 168, 170 ater, 161-162, 164, 165, 170 callidus, 161 carbonarius, 161, 162 carbonarius nubiapex, 161 discalis, 161, 162, 165, 168, 170

Chrysops (continued) Cnidium (continued) excitans, 161, 162-163, 165, 168, 170 cnidiifolium, 3, 5, 6 frigidus, 161, 163, 164, 165, 168, 170 dubium (= venosum), 3 fugax, 161 Coccinella sentempunctata, 261 fulvaster, 161, 163, 165, 169, 170 Coccinellidae, 261, 262, 422 furcatus, 161, 163-164, 165, 167, 169, 171 Cockerell, T. D. A., 58, 96, 134, 141 furcatus chagnoni, 163 Coelambus, 99, 113 key, 165 Colbert, E. H. (see Elliot, D. H.), 388, 422 mitis, 161, 162, 164, 165, 169, 171 (see Kitching, J. W.), 388, 422 nigripes, 161, 163, 164, 165, 169, 171. Coleoptera, 34, 35-39, 40, 99-113, 114, 145. noctifer, 161, 164 173-214, 215, 216, 263, 267-480 noctifer pertinax, 164, 165, 169, 171 Coléoptères, 40, 216, 217 pertinax, 161, 164 Collart, A., 229, 241 proclivis, 161, 163 Collembola, 257 zinzalus, 161, 163, 164-165, 167, 169, 171 Colless, D. H., 382, 421 Church, N. S., 132, 141 Collinson, J. W. (see Kitching, J. W.), 388, 423 Chydaeus, 282, 283, 345-346, 388, 395, Colpodes, 173-214, 216 404, 407, 426, 440, 443, 473 acuminatus, 188 andrewesi, 346 acutulus, 188 bakeri, 346 aeneicauda, 188 bedeli, 346 aeauinoctialis, 188 constrictus, 346 agilis, 197 amplicollis, 188-189 formosanus, 346 gestroi, 346 anchomenoides, 199 hinnus, 346 angulosus, 189 javanicus, 346, 466 aphaedrus, 189 iedlickai, 346 aproximatus, 173, 174, 212 kirishimanus, 346 atratus, 203, 204 miwai, 346 bicolor, 192 obscurus, 345, 346 biovatus, 189 obtusicollis, 346 brachyderus, 190 papua, 346 bromeliarum, 174 planicollis, 346 brullei, 190 rufipes, 346 brunneus, 174 schaubergi, 346 brunnipennis, 199 shibatai, 346 buchanani, 175 shikokuensis, 346 caeruleomarginatus, 190 yunnanus, 346 caeruleus, 190, 191 cicadellids, 25 chalcopterus, 207 Cicindela, 42 championi, 191 Cicindelidae, 40, 216 chaudoiri, 191 chloreus, 202 Cicindelinae, 40 Cinnamomeae, 61 choreus, 202 coeruleomarginatus, 190 Cirriphyllum cirrosum, 120 coeruleus, 191 Clausen, C. P., 68, 69, 70, 74, 96 Clements, F. E., 134, 141 columbinus, 192 Clench, H. K., 31, 32 concisus, 189, 192 Clytochrysus nigrifrons, 29 conicicollis, 192 Cnidium, 3-8, 242 cordatus, 193

Colpodes (continued) crossomerus, 193 cvanides, 194 cvanipennis, 193 cvcloderus, 194 delicatulus, 194 devrollei, 194 dilutus, 194 durangensis, 195 ebeninus, 195 ervthrocerus, 195 euides, 191 evanescens, 196 falli, 196 femoralis, 196 forreri, 196 fragilis, 198 fratellus, 196 gracilis, 197 guatemalensis, 197 guerrerensis, 214 haptoderoides, 197 harpaloides, 197 incommodus, 204 inops, 198 iricolor, 198 jalapensis, 196, 197 laetiusculus, 198 limbicollis, 198, 199 longiceps, 201 longipes, 199 lucilius, 199 lugens, 199 lyratus, 200 lyrophorus, 200 macrous, 200 marginicollis, 200 megalops, 200 melanocnemis, 201 metallicus, 201 minimus, 201 moestus, 201 monachus, 202 nebrioides, 193 neglectus, 203 niger, 202 nitidus, 203 nugax, 203 nyctimus, 203

Colnodes (continued) obscurellus, 203 obscurus 204 olivaceus, 204 omaseoides, 204 orbicollis, 205 pallidipes, 205 parviceps, 205 pectoralis, 205 petilus, 192 phaeolomus, 206 picicornis, 206 planicollis, 203 platysmoides, 206 porrectus, 206 pristonychoides, 206 procephalus, 207 procephalus var. hondurae, 207 prolongatus, 194 pterostichoides, 207 purpuratus, 207 purulensis 207, 208 quadrilaterus, 208 recticollis, 208 rectilineus, 208 reflexicollis, 208 reflexus, 208 robustus, 208 rubidus, 209 ruficornis, 209 rufiventris, 209 rufulus, 209 scabricollis, 209 segregatus, 210 semiopacus, 210 severus, 210 sexfoveolatus, 210 sexpunctatus, 191 simplicior, 203 sphodroides, 210 spinifer, 210 stenos, 203 steropoides, 211 striatopunctatus, 211 stricticollis, 211 subauratus, 211 subcyaneus, 211 suffectus, 192 tenuicornis, 194, 212

Colpodes (continued) Crowson, R. A., 388, 421 teter, 212 Cruciferae, 137 transfuga, 212 Crysis (Pentacrysis) shanghaiensis, 32 transversicollis, 213 Csiki, E., 188, 189, 190, 191, 192, 193, 194, tristis, 201 195, 196, 197, 198, 199, 200, 201, 202, trujilloi, 196, 197 203, 204, 205, 206, 207, 208, 209, 210, unilobatus, 213 211, 212, 213, 214, 216, 274, 285, 286, valens, 213 287, 288, 289, 290, 296, 322, 350, 353, validus, 213 374, 421 variabilis, 214 Cullumanobombus, 126, 142 versicolor, 194 Cumber, R. A., 119, 122, 126, 132, 133, 141 violaceipennis, 214 Cumming, M. E. P., 56, 96 Colymbetes, 109-110, 114 Curculionidae, 318 dahuricus, 110 Curtis, J., 338, 339, 421 dolobratus, 110 Cybister, 111 longulus, 109, 110 fimbriolatus, 111 rugipennis, 110 Cybisterinae, 111 sculptilis, 110 Cychrini, 419 Colymbetinae, 106-110 Cyclorrhapha, 382, 422 Compositae, 8, 242 cynipid, 56, 95, 96 Conioselinum, 3-8, 242 galls, 93, 94, 98 chinense, 3, 4, 6, 7, 8, 11 wasps, 98 tataricum, 4 Cynipidae, 55-94, 95, 96, 97, 98 Cynipoidea, 74, 95, 96, 98 Coptotomus, 109 interrogatus, 109 Cynips divisa, 92 Coquerel, J. C., 191, 216 kollari, 68, 88, 95 Corbet, P. S., 31, 32, 117, 118, 121, Cyrtolaus, 175 D'Abrera, B., 47 127, 128, 131, 133, 141, 149 (see Oliver, D. R.), 117, 144 Dacnusa fuscipes, 232 Cornus stolonifera, 58 Dalla Torre, W. K., 58, 96 Danaidae, 47 Cosens, A., 55, 61, 66, 96 Crabro, 15, 28, 30, 33 Daptini, 378 advenus, 33 Daptus incrassatus, 377 latipes, 15, 21, 28, 33 Darlington, P. J. Jr., 196, 216, 263, 270, 290, Crabroninae, 13, 20, 21, 28-30, 31, 33 296, 346, 382, 383, 384, 386, 388, 403, crabronine, 20, 21, 22, 31 404, 405, 409, 413, 421 Crabronini, 28-30 Darwin, C., 384, 421 Crasodactylus, 280, 286-287, 389, 390, Daucus carota, 29 Day, J. H., 117, 141 404, 405, 435, 440, 443, 472, 476 indicus, 286, 287, 467 deer flies, 161-171 punctatus, 286, 287, 405 Dejean, P. F. M. A., 40, 191, 199, 201, 202, Creobina, 387 203, 216, 289, 290, 295, 296, 298, 299, Cretaceous, 387, 388, 389, 391, 392, 300, 308, 313, 320, 322, 339, 340, 342, 393, 394, 395, 396, 397, 402, 413, 343, 347, 348, 349, 350, 351, 353, 354, 415, 476, 477 358, 365, 366, 373, 374, 377, 378, 380, Criniventer, 280, 292-293, 390, 399, 381, 382, 422 406, 435, 440, 443, 472 delphacid, 25 rufus, 292 Delphinium, 232

Desmopachria, 101

Crossocerus, 15, 22, 28

Desmopachria (continued) Diplolepis (continued) convexa, 101 rosae, 58, 61, 65, 66, 67, 71, 75 Diabasis, 166 (= Rhodites) rosae, 97 Diachromus, 277, 279, 380, 381, 397, rosarum, 61 398, 404, 405, 435, 441, 444, 473 spinosellus, 59 Diploplectron, 22, 32 germanus, 381, 468, 471 Diaphoromerus, 289, 295, 296, 393 peglowi, 14, 21, 22 iridipennis, 295 Diptera, 3-8, 29, 144, 161-171, 219-253. 254, 255, 257, 382, 422 species group, 296 Diatypus, 280, 293, 294, 295, 337-338, Dipteren, 8, 241 339, 391, 392, 397, 399, 435, 440, Diptères, 241 443, 472 Distichium, 120 Dichaetochilus, 341, 342 capillaceum, 120 jeanneli, 267, 268, 342 Ditrichum flexicoule, 120 Dicheirus, 269, 277, 281, 309, 381-382, Dorf, E., 409, 413, 415, 416, 421 395, 396, 397, 398, 406, 425, 435, Dorylinae, 255 441, 444, 473 Doutt, R. L., 63, 96 brunneus, 382 Downes, J. A., 31, 32, 127, 131, 132, 141 dilatatus, 382 Drepanocladus aduncus, 120 dilatatus angulatus, 276, 277, 341, 382 brevifolius, 117 obtusus, 382, 398 revolvens, 117, 120 piceus, 277, 309, 382 Drosophila, 44, 257, 258 strenuus, 382 melanogaster, 257 Dichiropsis, 337, 338 Dryas, 117, 119, 120, 121 Dicranoncus, 216 integrifolia, 136, 156 Dietz, R. S., 384, 388, 389, 392, 393, -Kobresia habitats, 119, 121 394, 395, 409, 413, 422, 476, 477, Dryophanta erinacei, 98 478, 479 Dryudella, 21, 23, 31 Digby, P. S. B., 31, 32, 141 picta, 14, 21, 23 Dubach, P., 32 digger wasps, 32, 33 Duftschmidt, C. E., 351 Dineutus, 111 assimilis, 111 Dyscolus, 173 discolor, 111 acuminatus, 187 (Ophryodactylus) aequinoctialis, 188 horni, 111 nigrior, 111 anchomenoides, 199 Dinkelman, M. G., (see Malfait, B. T.), caeruleomarginatus, 190 384, 424 chalcopterus, 207 Diodontus, 14, 22, 24 cupripennis, 193 Diplolepis, 58, 61, 65, 66, 67, 68, 71, 74 cvanea, 190 75, 88, 93, 94, 95, 98 cyanipennis, 193 bicolor, 57, 59, 68 nebrioides, 193 eglanteria, 61 nitidus, 202 (Stenocnemus) pallidipes, 205 eglanteriae, 61 ignota, 67 purpuratus, 207 japonica, 65, 66, 87, 88, 92 variabilis, 214 Dytiscidae, 99, 101-111, 113, 114 mayri, 58 Dytiscus, 110, 114 multispinosus, 57 anxius, 110 occidentalis, 59 polita, 55-94 dauricus, 110

Dytiscus (continued) Euceroptres, 62 fasciventris, 110 Eudichirus, 279, 341, 342, 343, 394, 440, 443, harrisi, 110 472 hybridus, 110 Eulophidae, 62 Eupelmella vesicularis, 62 parvulus, 110 sublimbatus (= cordieri), 110 Eupelmidae, 62 verticalis, 110 Europhilus, 174, 175 Eady, R. D., 58, 96 Euryderus, 419 Ectemnius, 15, 21, 29-30, 31 Eurytoma, 68, 69, 70, 71, 95 arcuatus, 15, 22, 29 curta, 79 dives, 15, 22, 29 flavicrurensa, 68 lapidarius, 15, 29 incerta, 68 nigrifrons, 15, 21, 29 longavena, 55, 62, 63, 64, 65, 68-71, 72, 73, trifasciatus, 15, 29-30 74, 76, 77, 78, 79, 80, 81, 82, 84, 85, 94 Egbert, D., (see McCracken, I.), 59, 65, 97 monemae, 69 Ekstam, O., 134, 141 pachyneuron, 68 Elaphrini, 386 parva, 71, 97 elder, 25 robusta, 71 etiology, 97 rosae, 70, 71 Elliot, D. H., 388, 422 terrea, 68 (see Kitching, J. W.), 388, 423 Eurytomidae, 55, 62 Elliptoleus, 175 Eurytomids, 68, 71 van Emden, F., 290, 291, 292, 293, Eurytrichus, 295 295, 296, 301, 306, 308, 310, 312, flebilis, 310, 311 317, 320, 322, 338, 339, 374, 422 nitidipennis, 305 Empididae, 254 piceus, 309 Eocene, 413 Eutrema edwardsii, 117 Epeiridae, 23 Evans, D., 85, 88, 96 Ephestia kühniella, 257 Evans, H. E., 21, 22, 23, 24, 26, 27, 28, 29, 30, Epicauta, 42 32, 33 Epilachna, 261 Evarthrus, 409, 414, 420 Epilobium, 16, 20, 29 Fabricius, J. C., 348, 349, 350, 351, 352, 374 angustifolium, 58 Fagales, 56 latifolium, 136, 137, 156 Fagan, M. M. (see Rohwer, S. A.), 58, 97 Equisetum, 120 Fairmaire, L., 342 arvense, 117 Fall, H. C., 99, 104, 113 variegatum, 117 Falls, D. F. (see Morgan, W. J.), 384, 425 Erechites hieracifolia, 318 Felt, E. P., 56, 58, 96 Ericaceae, 137 Feronia adoxa, 35, 39 Erichson, W. F., 296, 322, 381, 422 funesta, 201 interfector, 39 Erigeron canadense, 310 lugens, 199 Eriophorum, 120 scheutzeri, 117 moesta, 201 triste, 117 monacha, 202 Eriosoma lanigerum, 25 opaca, 201 Erwin, T. L., 270, 382, 392, 409, 414, terminata, 295, 313 422. tristis, 35, 39 (see Ball, G. E.), 270, 419 Fervidobombus, 126, 142

fireweed, 16, 20, 21

Eucalyptus, 301

Flagg, W. (see Scholander, P. F.), 32, 34 Gnathaphanus (continued) flies, 20 aridus, 290 Fooden, J., 385, 388, 422 basilewski, 296 Forbes, S. A., 360, 422 chinensis, 290 Formica polyctena, 257 chujoi, 290 de Fourcroy, A. F., 58, 96, 322 denisonensis, 290 Free, J. B., 127, 131, 132, 135, 137, froggatti, 290 138, 142 glamorgani, 290 Freitag, R. (see Ball, G. E.), 409, 414, 420 goryi, 290 (see Lindroth, C. H.), 39, 40, 316, herbaceus, 290 317, 367, 424 kansuensis, 290 Freuchen, P., 117, 127, 134, 142 latus, 290 Frey, R., 230, 235, 241 licinoides, 290 Friese, H., 116, 117, 126, 127, 132, 134, melbournensis, 290 138, 142 minutus, 290 Frison, T. H., 117, 121, 127, 134, 142 papuensis, 290 Frost, S. W., 241 parallelus, 290 Fullaway, D. T., 59, 67, 96 philippensis, 290 Fulmek, L., 71, 74, 75, 96 picipes, 290 Fye, R. E., 132, 142 pulcher, 290 gall aphids, 96 punctifer, 290 community, 61-63 rectangulus, 290 flies, 95 riverinae, 290 makers, 96, 97 sculpturalis, 290 wasps, 97 subolivaceus, 290 galls, 95, 96, 97, 98 upolensis, 290 Gary, N. E., 127, 131, 142 vulneripennis, 289, 290 Gaumer, G. C. (see Kurczewski, F. E.), whitei, 290 28, 33 Gory, H. L., 290 Gavriliok, V. A., 127, 131, 134, 142 Gorytes, 27 Geiger, R., 31, 33 albosignatus, 15, 21, 27 Gelechiidae, 26 Gorytini, 27, 31 Geoffroy, E. T., 58, 96 Goureau, C., 224, 241 Geometridae, 26 Graham, A., 409, 422 Geomys, 370 Granovsky, A., (see Ignoffo, C. M.), 92, 96 Geopinus, 270, 281, 377-378, 396, 406, Grant, V., 134, 142 435, 441, 444, 473 Graphoderus, 99, 111, 113 incrassatus, 378, 396, 397, 398, 468, 471 fasciatocollis (= fascicollis), 111 Germar, E. F., 289, 296, 358, 368, 422 liberus, 111 Gerstaecker, C. E. A., 349 manitobensis, 111 Glossina, 1 occidentalis, 111 glycerol, 32, 34 perplexus, 111 Glyphomerus, 71 grasshoppers, 20 stigma, 55, 62, 63, 64, 70, 71-73, 74, Griffiths, G. C. D., 3-8, 219-253, 254, 382, 422 75, 76, 77, 78, 79, 80, 81, 82, 84, 85, Groschke, F., 236, 237, 242 94 ground-beetles, 40 Glyptolenus, 175 Guérin-Méneville, F. E., 286, 287, 422 Gnathaphanus, 280, 289, 290, 390, 398, Gymnaetron, 28

antirrhini, 28

404, 405, 435, 440, 443, 472





Gynandromorphus, 281, 380-381, 397, Haldeman, S. S., 314, 350, 422 398, 404, 435, 441, 444, 473 Haliplidae, 99, 100-101 etruscus, 381, 468, 471 Haliplus, 99, 100, 113 peyroni, 380, 381 (Liaphlus) apostolicus, 100 Gynandrotarsus, 267, 268, 269, 270, 273, (s. str.) blanchardi, 100 283, 296, 351, 354-356, 360, 361, 362, (Paraliaphlus) borealis, 100 363, 364, 366, 367, 368, 370, 371, 396, (Liaphlus) canadensis, 100 398, 402, 403, 406, 413, 414, 415, 416, (Liaphlus) connexus, 100 417, 435, 441, 444, 446, 449, 450, 456, (Liaphlus) cribrarius, 100 457, 464, 465, 473, 475, 480 (s. str.) immaculicollis, 100 contemporary zoogeography of the (s. str.) longulus, 100 subgenus, 413-415 (Paraliaphlus) pantherinus, 100 historical zoogeography of the sub-(s. str.) strigatus, 100 genus, 415-417 (Liaphlus) subguttatus, 100 key to the species, 357-358 (Paraliaphlus) triopsis, 100 phylogeny of the species, 402-403 Hallam, A. (see Smith, A. G.), 384, 389, 392, Gyrinidae, 99, 111-112 410, 413, 426 Gyrinus, 99, 111-112, 113 Hamilton, W. I. (see Marler, P. R.), 127, 144 aeneolus, 111 Haplocentrus, 375 affinis, 112 Haplocoelus, 35 analis, 112 Harpali, 263 aquiris, 112 Harpalina, 264, 278, 388 bifarius, 112 Harpalinae, 216, 217, 421 borealis, 112 Harpaline, 278 confinis, 112 Harpalinen, 425, 426 dichrous, 111 Harpalini, 263, 264, 267-480 impressicollis, 112 Harpalomimetes, 282, 346-347, 395, 404, 440, latilimbus, 112 443, 473 lugens, 112 andrewesi, 346, 347 maculiventris, 112 sjostedti, 346 minutus, 111 Harpalus, 263, 264, 278, 287, 288, 381 opacus, 112 agilis, 313 piceolus, 113 agitabilis, 305 picipes, 112 anthracinus, 366 pugionis, 112 caenus, 375 ventralis, 111 conspectus, 305 wallisi, 112 dulcicollis, 362 Habrocytus, 55, 62, 63, 64, 70, 73, laevis, 338 75-76, 77, 78, 79, 80, 81, 82, 84, 85 lateralis, 288 bedeguaris, 75, 76, 96 maculicornis, 307, 308 medicaginis, 75, 98 madagascariensis, 278 periclisti, 75, 96 merula, 368 trypetae, 75 mexicanus, 295, 320-321 Habronema, 255 oblongiusculus, 339 Habu, A., 263-264, 290, 345, 346, 350, ocreatus, 313-314 351, 422 patronus, 307 hackberry, 97 poeciloides, 353 Haematobia irritans, 255 punctilabris, 344 Haematopota, 166 rotundicollis, 287

Harpalus (continued) rusticus, 354, 364 sericeus, 379 similis, 313, 317 testaceus, 314, 317 virescens, 308 viridellus, 322 viridulus, 322 wilkensi, 322 Harper, A. M., 57, 96 Harrell, B. E. (see Martin, P. S.), 395, 424 Harris, B. J. (see Kurczewski, F. E.), 24, 28.33 Harrison, J. W. H., 61, 96 Hartig, F., 235, 236, 237, 242 Hartman, F., 23, 33 Hasselrot, T. B., 121, 126, 127, 132, 133, 134, 142 Hatch, M. H., 113, 175, 216 Havekius, 345 constrictus, 345 Heilprin, A., 403, 404, 422 Hellén, W., 116, 142 Heming, B., 44-46 Hemiplatvnus, 192, 213 (Hemiplatynus) chihuahuae, 191 (Stenoplatynus) umbripennis, 213 Hemiptera, 22 Hendel, F., 224, 225, 226, 228, 233, 235, 238, 240, 242 Hendrichs, J. (see Barr, T. C., Jr.), 174, 213, 215 (see Bolivar y Pieltain, C.), 174, 178, 189, 190, 200, 209, 213, 215, 216 Hennig, W., 270, 382, 383, 387, 422 Henriksen, K. L., 116, 138, 142 (see Braendegaard, J.), 116, 140 Heptagyiae, 387, 420 Heracleum, 219, 220, 221, 222, 225, 226, 227, 228, 234, 238, 240 lanatum, 58, 225, 226, 228, 230, 234, 235, 236, 251 mantegazzianum, 238 sphondylium, 220, 224, 225, 226, 227, 238, 253 Hering, E. M., 3, 4, 8, 220, 225, 227, 230, 231, 232, 234, 236, 237, 238, 240, 242 (see Groschke, F.), 236, 237, 242

Hering, M., 3, 8, 228, 230, 231, 233, 236, 237, 238, 239, 242 Hesperiidae, 47 Hexatrichus, 283, 353-354, 396, 398, 404, 405, 435, 441, 444, 473 Heyne, A., 190 Himmer, A., 132, 134, 142 Hippodamia, 42 Hobbs, G. A., 117, 121, 124, 126, 132, 138, 142, 143 Hock, R. J. (see Scholander, P. F.), 32, 34 Hocking, B., 1-2, 31, 33, 51-53, 127, 131, 134, 135, 137, 143, 159-160 Hodek, I., 261-262 Hoeg. O. A., 134, 137, 143 Hoffmeyer, E. B., 71, 96 Holden, J. C. (see Dietz, R. S.), 384, 388, 389, 392, 393, 394, 395, 409, 413, 422, 476, 477, 478. 479 Holm, A. (see Carpenter, G. D.), 116, 141 Holmen, K., 134, 143 Homoptera, 74 honey bee, 142, 145 components of, 145 guides, 144 Hope, F. W., 290 Hopkins, D. M., 409, 422 Horn, G. H., 276, 374, 382, 423 horse flies, 166 Howden, H. F., 408, 409, 412, 414, 423 Huber, L. L., 74, 96 Hudson, J. E., 255-256 Hügel, M. F., 134, 143 Hull, D. L., 382, 423 Hultén, E., 3, 8, 220, 242 humble-bees, 141, 143, 144, 145 Hurd, P. D. (see Baker, H. G.), 31, 32 Hydaticinae, 110-111 Hydaticus, 99, 110 modestus, 110, 113 piceus, 110 stagnalis, 113 Hydroadephaga, 99-113 Hydrocanthari, 40, 425 Hydroporinae, 101-106, 114 Hydroporus, 99, 103-106, 113 (s. str.) appalachius, 105 (s. str.) arcticus, 104 (s. str.) badiellus, 105

Hydroporus (continued) Hygrotus (continued) (Heterosternus) clypealis, 103 nubilus, 102 (s. str.) columbianus, 104 patruelis, 102 consimilis, 103 punctatus (= savi), 102 (s. str.) dentellus, 104 punctilineatus, 102, 103 (s. str.) despectus, 105 salinarius, 103 (s. str.) dichrous, 104 sellatus, 102 (Oreodytes) duodecimlineatus, 106 suturalis, 102 (s. str.) fuscipennis, 105 tumidiventris, 103 (s. str.) glabriusculus, 105 turbidus, 102 (Deronectes) griseostriatus, 106 unguicularis, 103 laevis, 106 Hylemya cilicrura, 30 Hymenoptera, 32, 33, 34, 42, 55-94, 95, 96, lapponum, 113 (s. str.) melancephalus, 105 97, 98, 115-157, 232, 257 (s. str.) melsheimeri, 104 Hyperaspis, 42 (s. str.) niger, 104 Hyperodes, 318 (s. str.) notabilis, 104 delumbis, 28 (s. str.) obscurus, 105 Hypharpax, 281, 288-289, 389, 390, 404, 405. occidentalis, 105 435, 440, 443, 472 (Heterosternus) paugus, 104 abstrusus, 289 (s. str.) pervicinus, 105 aerus, 289 (Heterosternus) planiusculus, 104 antarticus, 289 (s. str.) rectus, 105 australis, 289 (Deronectes) rotundatus (= elegans), 106 bostocki, 289 (s. str.) rufinasus, 106 celebensis, 289 (Oreodytes) scitulus, 106 dampieri, 289 (Heterosternus) sericeus (= superioris), dentipes, 288, 289 104 devrollei, 289 (s. str.) signatus, 105 flavitarsis, 289 (Heterosternus) solitarius, 104 flindersi, 289 (Heterosternus) stagnalis, 104 habitans, 289 (Deronectes) striatellus, 106 inornatus, 289 (s. str.) striola, 105 interioris, 289 (s. str.) tartaricus, 105 kingi, 289 (s. str.) tenebrosus, 105 krefti, 289 (s. str.) tristis, 106 moestus, 289 (Heterosternus) undulatus, 103 nitens, 289 (Heterosternus) vittatus, 103 obsoletus, 289 Hydrovatus, 101 opacipennis, 289 pustulatus, 101 peroni, 289 Hygrotus, 99, 102-103 puncticollis, 289 acaroides, 102 queenslandicus, 289 canadensis, 102 ranula, 289 compar, 102 rotundipennis, 289 dentiger, 103 sculpturalis, 289 dispar, 102 simplicipes, 289 farctus, 102 sloanei, 289 impressopunctatus, 103 varus, 289 masculinus, 103 vilis, 289

Hypocrabro chrysargirus, 29 Klug, J. C. F., 338, 342 trifasciatus, 30 knapweed gall-fly, 79, 98 Hyponomer, 244 Knee, W. J., 135, 143 Ignoffo, C. M., 92, 96 Knuth, P., 134, 143 Ilybius, 99, 108-109, 114 Kock, A. (see Schwartz, I.), 134, 145 angustior, 108 Kolbe, H. J., 342 biguttulus, 109 Krombein, K. V., 23, 24, 26, 27, 30, 33, 59, 97 discedens, 109 (see Muesebeck, C. F. W.), 21, 22, 23, 24, 25, fraterculus, 109 26, 27, 28, 29, 30, 34, 59, 62, 67, 97 pleuriticus, 108 Kubska, J., 229, 235, 242 subaeneus, 109 Kuiken, K. A. (see Weaver, N.), 134, 145 inquilines, 96 Kuntzen, H., 343 Insect-flower associations, 143 Kurczewski, E. J. (see Kurczewski, F. E.), 24, relations, 33 25, 29, 33 insect galls, 96 Kurczewski, F. E., 23, 24, 25, 28, 29, 33 biology of, 96 Kuroda, M., 240, 243 morphology of, 96 Kuschel, G., 403, 404, 406, 423 Irving, L. (see Scholander, P. F.), 32, 34 Küster, E., 56, 97 Ishida, H. (see Nakane, T.), 290 Kuster, J. E., 257-258 Ithytolus, 175 Kuznetzov-Ugamskij, N. N., 65, 66, 97 Iwosiopelus masaudai, 290 LaBerge, W. E. (see Michener, C. D.), 126, 144 jackpine, 16 Labyrinthodont amphibians, 388 Jackson, C. I., 128, 143 Laccophilinae, 101 Jacobson, G. G., 117, 127, 134, 138, Laccophilus, 101 143, 276, 423 maculosus, 101 Jacquelin du Val, P. N. C., 276, 423 inconspicuus (= biguttatus), 101 Jamieson, C. A. (see Auclair, J. L.), 134, Laccornis, 106 140 conoideus, 106 Jeannel, R., 276, 278, 337, 340, 342, 343, Lacordaire, J. T., 276, 423 345, 350, 351, 353, 354, 386, 423 La Ferté-Senectere, F. T., 349, 354, 355, 357, Jedlička, A., 340, 344, 345, 346, 349, 360, 362, 423 423 Laporte, F. L. de., 193, 216 Jensen, J. A. (see Elliot, D. H.), 388, 422 La Roi, G., 57, 97 Johansen, F., 117, 121, 127, 134, 143 Larrinae, 21, 23, 33 Johnson, N. E., 318, 366, 423 Larson, D. J., 99-113, 409, 423 Juncus albescens, 117 Larson, R. I., 51 biglumis, 117 Laser, 238 castaneus, 117 Laserpitium, 219, 220, 222, 234, 235, 238 Jurassic, 387, 388, 389, 392, 476, 477 latifolium234, 236, 237 Kalaplasmic galls, 56 leafhoppers, 20 Kaltenbach, J. H., 224, 233, 242 Leclercq, J., 29, 30, 33 Kareya, 344 Le Conte, J. L., 40, 192, 198, 211, 216, 298, Karl, O., 235, 242 299, 305, 309, 310, 347, 350, 354, 355, 357, Kevan, P. G., 31, 33, 137, 143 358, 362, 368, 374, 375, 376, 377, 382, 423, Kieffer, J. J. (see Dalla Torre, W. K.), 58, 424 Ledum, 61 King, P. G. 409, 423 groenlandicum, 58 Kinsey, A. C., 56, 57, 58, 65, 66, 96, 97 Leech, H. B., 99, 113 Kitching, J. W., 388, 423 Leguminosae, 137

Leng, C. W., 200, 209, 216, 306, 424 Malfait, B. T., 384, 424 Leopold, A. S., 413, 424 Malyshev, S. I., 56, 62, 71, 97 Leopold, E. B. (see Wolfe, J. A.), 410, 427 Mani, M. S., 56, 57, 62, 65, 79, 92, 97 Lepidoptera, 42, 47, 145 Mannerheim, C. G. von. 216, 381, 424 lepidopterous caterpillars, 20 Manning, A., 135, 144 Lequillon, 290 Manning, S. A., 229, 235, 243 Lestica, 30 mantids, 23 producticollis, 15, 30 Marler, P. R., 129, 144 Lestiphorus cockerelli, 15, 21, 27 Martin, J. E. H. (see Mosquin, T.), 116, 134, Lewis, W. H., 61, 94, 97 144 Libanotis, 238 Martin, P. S., 395, 409, 411, 412, 416, 424 Libytheidae, 47 Maslin, T. P., 383, 424 Lindner, E., 254 Matthew, W. D., 384, 424 Lindroth, C. H., 35, 39, 40, 174, 175, Mayr, E., 270, 382, 425 176, 178, 179, 185, 211, 216, 263, Mecoptera, 257 269, 275, 276, 295, 305, 306, 309, Medler, J. T., 119, 122, 144 310, 311, 312, 313, 314, 316, 317, (see Fye, R. E.), 132, 142 318, 320, 348, 350, 351, 354, 355, (see Knee, W. J.), 135, 143 362, 363, 364, 365, 366, 367, 368, Megabombus hyperboreus, 144 369, 370, 372, 373, 374, 375, 376, Mehringer, P. J. (see Martin, P. S.), 409, 411, 378, 382, 424 416, 424 Lineus, 2 Meijere, J. C. H. de., 4, 8, 225, 228, 229, 230, Linnaeus, C., 381 231, 233, 234, 235, 237, 238, 239, 240, 243 Linnaniemi, W. M., 235, 243 Melanagromyza, 220 Liodessus, 101 Melandrium affine, 136 Liquidamber forest, 334 Melanoplus, 24 Liriomyza, 220 Meloe, 42 lutea, 220 Menetries, E., 382 strigata, 220 Mesembrina mystacea, 254 wachtli, 220 Mesozoic, 387, 388 Løken, A., 117, 121, 127, 134, 143 Mexisphodrus, 173-214, 215 Long, F. L. (see Clements, F. E.), 134, profundus, 207 141 tlamayensis, 207 veraecrucis, 214 Longstaff, T. G., 127, 134, 143 Michalska, Z., 229, 235, 243 Loricerini, 419 Losina-Losinsky, L. K., 32, 33, 34 Michener, C. D., 126, 144 Louwerens, 290, 296 Microsarus, 289, 290 Lubliner-Mianowska, K., 134, 143 insularis, 289 Lundqvist, A., 235, 238, 243 melbournensis, 289 Lutshnik, V., 278, 354, 424 Microtus ochrogaster, 372 Lycaenidae, 47 midges, 382, 387 lygaeids, 22 Migadopini, 385, 386 Lyneborg, L. (see Rydén, N.), 229, Milliron, H. E., 117, 121, 127, 134, 138, 139, 240, 243 144 Lyon, R. J., 62, 97 Milstead, W. W. (see Auffenberg, W.), 409, 419 Lystrosaurus, 423 Mimesa, 21, 24-25 MacGinitie, H. D., 409, 424 clypeata, 21, 25, 31 MacLeay, W. J., 289, 290, 296, 424 pauper, 14, 21, 24-25

Mimumesa, 14, 25

MacLeay, W. S., 288, 290, 344, 424

Mimumesa (continued) clypeata, 14 Miocene, 392, 411, 413 Miscophini, 23 Miscophus, 23, 33 americanus, 14, 21, 23, 31 mites, 145 Monroe, E., 31, 34 Moore, I., 313, 425 Morawitz, A. V., 351, 352 Mordwilkoja vagabunda, 92, 96 Moreau, R. E., 394, 406, 425 Morgan, W. J., 384, 425 Morphogynandrus, 380, 381 Moser, J. C., 71, 74, 97 Mosquin, T., 116, 134, 144 moths, 26 Motschoulsky, V. von., 194, 217, 374 Muesebeck, C. F. W., 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 34, 59, 62, 67, 97 Müller, G., 340, 342, 425 Mulsant, E., 339 Murray, A., 337, 338, 425 Musca autumnalis, 28 domestica, 28, 29, 30, 257 Muscidae, 254, 255 Mutchler, A. J. (see Leng, C. W.), 200, 209, 216 McAlpine, J. F., 116, 134, 137, 138, 144 McCracken, I., 59, 65, 97 McLachlan, R., 134, 144 M'Nary, J. (see Cockerell, T. D. A.), 134, 141 Nakane, T., 290 Napomyza carotae, 220 nectar, 141, 143, 144, 145 Nelson, G. L., 382, 425 Nemaglossa, 279 Neoscutopterus, 109 angustus, 109 horni, 109 Newman, E., 40, 378, 380, 425 Newport, G., 132, 144 Niblett, M., 61, 65, 70, 71, 76, 88, 89, Nielsen, B. O. (see Rydén, N.), 229, 240,

Neilsen, E. T., 132, 134, 144

Neilsen, I. C. (see Johansen, F.), 117, 121, 127, 134, 143 Nitelopterus, 33 Noonan, G. R., 267-480 Norway spruce gall, 97 Nöthiger, R. (see Ursprung, H.), 43 Nothofagus, 413 Notiobia, 267, 268, 269, 270, 273, 281, 291, 293-337, 338, 339, 389, 390, 391, 392, 393, 394, 403, 406, 409, 413, 417, 435, 440, 443, 455, 456, 462, 463, 472, 474, 476, 477, 479 aeneola, 322 aequata, 331 agilis, 317 agitabilis, 306 amethystina, 296, 401, 408, 410, 474 angusticollis, 314, 317 angustula, 296 antarticus, 289 aulica, 322 australasiae, 296 bamboutensis, 338 basilewski, 296 bradytoides, 296, 400, 401, 474 brevicollis, 294, 295, 298, 300-301, 302, 368, 399, 401, 410, 411, 445, 448, 454, 460, 474, 479 calathoides, 311, 312 castaneus, 310, 311, 312 cephalus, 305, 306 chalcites, 296, 401, 408, 410, 474 championi, 322 chiriquensis, 294, 322 chloroderus, 308 concinna, 322 concolor, 322 connivens, 314, 317 convexulus, 311, 312 cooperi, 267, 268, 294, 325-326, 327, 448, 451, 455, 462 cupreola, 294 cupripennis, 294, 296, 400, 474 cyanippa, 293, 294, 295, 298, 300, 302, 399, 401, 410, 445, 447, 454, 458, 460, 474, 479 cyanippus, 302 delicatus, 305, 306 diffusus, 338 disaparilis, 294, 322

Notiobia (continued) Notiobia (continued) dohrni, 337, 338 maculicornis, 299, 300, 307-308, 400, 413, dubia, 322 445, 447, 452, 459, 474, 479 elata, 296 margaretae, 296 elongensis, 338 melaena, 294, 325, 329, 331-332, 448, 451. ewardsi, 296 455, 462 ewarti, 267, 268, 294, 324, 326-327. melanara, 296 448, 450, 456, 462 mexicana, 298, 320-321, 400, 401, 407, extraneus, 311, 312, 313 408, 410, 411, 445, 447, 452, 458, feanus, 338 459, 474, 479 flavipalpis, 296 nebrioides, 293, 321, 322 flebilis, 299, 310-311, 312, 399, 400, nicki, 267, 268, 290, 291, 292 nigrans, 296 408, 410, 411, 445, 448, 452, 460, 474, 479 nitidipennis, 298, 299, 304, 305-306, 315. flebilis castaneus, 310 399, 400, 410, 413, 445, 448, 450, 452, flebilis flebilis, 310, 311 459, 474, 479 flebilis purpurascens, 310, 311 oblongiuscula, 296 obscura, 294, 323, 325, 332-333, 448, 451, flindersi, 289 floridanus, 314, 317 455, 463 foveicollis, 314, 317, 318 obscura virens, 332 fuscipennis, 314, 317 ocreatus, 316, 317 germari, 296 opaca, 296 hebes, 314, 317 ovata, 296 hilariola, 293, 295, 298, 302-303, pallipes, 325, 333-334, 448, 451, 455, 399, 410, 445, 447, 454, 460, 474, 463 479 pallipes subaurata, 333-334 inaequalipennis, 296 papuella, 296 inaudax, 311, 312 papuensis, 296 incerta, 294, 322 parallelus, 314, 317 innerans, 314, 317 parilis, 294, 324, 325, 334-335, 428, 463 iridipennis, 295, 296 patronus, 307 iucunda, 322 patrueloides, 296 key to the subgenus, 323-325 perater, 296 kivuensis, 338 peruviana, 296 laeviusculus, 300, 301 picea, 298, 309-310, 312, 317, 400, 410, lamprota, 298, 303, 318-319, 401, 413, 445, 447, 452, 459, 474, 479 408, 410, 445, 447, 453, 459, 474, picinus, 338, 469 479 planiuscula, 296 lamprotus, 318-319 planoimpressa, 296 lapevrousei, 296 polita, 296 laticollis, 296 porcatula, 296 praeclara, 294, 296, 322 latiusculus, 296 leiroides, 294, 324, 327-329, 334, 448, purpurascens, 297, 299, 311-313, 399, 400, 451, 454, 462 408, 410, 411, 413, 445, 447, 452, 474, 479 leonensis, 338 limbipennis, 294, 321-322, 324, 329quadricollis, 296 330, 448, 451, 455, 458, 463 queenslandica, 296 longipennis, 322 queenslandicus, 289 ludicollis, 296 rectangula, 296

Notiobioid (continued), 466, 472, 476, 477, Notiobia (continued) 478, 479 remarks on the phylogeny of the species of Notman, H., 307, 425 the subgenus, 402 Nowakowski, J. T., 222, 225, 228, 231, 232, ruficrura, 322 235, 238, 240, 243 rugosipennis, 296 ruwenzoricus, 338 Nummi, W. O. (see Hobbs, G. A.), 132, 143 Nunberg, M., 235, 240, 243 schlingeri, 267, 268, 300, 303-305, 399, 400, 410, 445, 447, 452, 460, Nymphalidae, 47 474.479 Nysson, 20, 21, 27 lateralis, 15, 27 schnusei, 296 subtilis, 15, 27 sculptipennis, 296 sericipennis, 296 Nyssoninae, 27, 31 Nyssonini, 27 similis, 313, 317, 322 oak galls, 95 sinuessa, 329 marble gall, 95 smithi. 338 stubeli, 296 Oligocene, 392, 412, 415, 416 Oligoxemus, 341, 342 subaurata, 322 Oliver, D. R., 117, 144 subovalis, 314, 317 (see Milliron, H. E.), 117, 121, 127, 134, subvirens, 314, 317 tenuitarsis, 305, 306 138, 139, 144 Onychopterygia, 216 terminata, 297, 298, 299, 300, 302, Onypterygia, 175 305, 306, 307, 308, 309, 310, 311, 312, 313-318, 320, 399, 400, 407, Ophiomvia, 220 408, 412, 413, 445, 447, 448, 450, Ophonus constrictus, 345 452, 461, 474, 479 Ophrvodactylus, 173, 214 Ophyra leucostoma, 30 terminata subvirescens, 317 Opuntia, 363 terminatus, 310, 313 Ormyridae, 62 transversicollis, 322 tucumana, 277, 291, 293, 295, 296, Ormvrus, 62 Orothecium chryseum, 117 399, 400, 401, 435, 474 Orthoptera, 258 tucumanus nicki, 291 orthopteroid, 23 umbrata, 293, 294, 322, 324, 325, 335-336, 337, 448, 451, 456, 463 Orthothecium chryseum, 120 Osmorhiza, 232 umbrifera, 293, 294, 322, 324, 325, aristata, 232 336-337, 448, 451, 455, 462 Osten Sacken, C. R. (Baron), 62, 65, 67, 97, vernicatus, 314, 317 virescens, 298, 299, 300, 308-309, 161, 162, 166 Oxybelini, 30 400, 410, 445, 447, 452, 460, 474, Oxybelus, 20, 30 479 bipunctatus, 33 viridellus, 322 quadrinotatus, 30 viridipennis, 296 uniglumis, 31 viridula, 322 uniglumis 4-notatus, 15 viridulus, 322 uniglumis quadrinotatus, 21, 30 wilkensi, 294, 322 Pachauchenius, 289, 290 wilkensi concolor, 322 wilkensi flavicincta, 322 celtidivesicula, 74 laeviceps, 289 wilkensi pallipes, 322 philippensis, 289 zoogeography of the subgenus, 413 Pachypsylla galls, 98 Notiobioid, 388, 389, 390, 393, 394, 397,

Pagonia, 166 Perigonini, 421 Paleocene, 402, 415 Peringuey, L., 276, 342, 425 Palmén, E. (see Lindroth, C. H.), 275, Permian, 388 276, 424 Perrault, G. G., 35-40 Pangoniinae, 166 Perty, J. A. M., 293, 321, 322, 425 Pantamorus peregrinus, 370 Petasites, 8, 242 Panzer, G. W. F., 351 Peucedanum, 238 Papaver radicatum, 136 Phanagnathus, 343-344, 394, 435, 440, 443, Papilionidae, 47 Papp, C. S. (see Swan, L. A.), 41 overlaeti, 277, 344 Paradiatypus, 294, 338, 392, 393, 397. Philanthinae, 27-28 399, 435 Philip, C. B., 161, 162, 163, 166 Paraphytomyza, 242 Phillips, W. J., 70, 71, 97 parasite, 96, 97, 98, 145 Philophuga, 423 parasitic cynipoids, 97 Phylloxeridae, 96 Parastomoxys mossambica, 255 Phytagromyza, 242 Park, O. W., 135, 144 Phytomyza, 3-8, 219-253 Parry, D. A., 31, 34 aconiti, 232, 233 Pastinaca, 219, 220, 221, 223, 225, 226, albiceps group, 3, 4, 219, 222-232, 233 238 angelicae, 5, 8, 10, 11, 219, 221, 222, 232, sativa, 224, 225, 226, 240 233-235, 236, 237, 238, 239, 248, 250, pea-galls, 97 253 Pechuman, L. L., 162, 165, 166 angelicae group, 219, 232-240 Peck, O., 68, 71, 74, 75, 97 angelicae kibunensis, 235, 236 Pedicularis arctica, 117, 136, 156 angelicastri, 221, 222, 228-230, 240, 247, capitata, 136, 156 250, 252 hirsuta, 117, 136 angelicella, 219, 226 Pelmatellina, 279 angelicivora, 221, 232, 233, 238-240, 250 Pelmatelline, 279 aralivora, 4, 220 Pelmatellus, 279 archangelicae, 219, 220, 221, 222, 230-232, Peltodytes, 100-101 247, 250, 252 edentulus, 100 arnaudi, 221, 222, 232 tortulosus, 101 bifida, 235 Pemphredon, 25 cicutae, 222 bipartior, 14, 21, 25, 31 cnidii, 3, 4, 5-6, 9 montana, 14, 25 conii, 222 Pemphredoninae, 13, 20, 21, 24-25, 31 conioselini, 3, 4, 5, 7-8, 9, 10, 220 pemphredonine, 21, 22, 31 heracleana, 221, 222, 232, 233, 236, 237-Pemphredonini, 25 238, 249, 253 pentatomid, 22 heraclei, 224, 225 heracleiphaga, 219, 225 Periclistus, 62, 67, 71, 75, 88, 93 brandti, 75 key, 4-5, 220-222 brandtii, 71 kibunensis, 219, 221, 232, 233, 236, 248 californicus, 67 lanati, 222, 225, 230, 244 piceus, 67 laserpitii, 219, 233, 234, 235 latifolii, 222, 232, 233, 236-237, 249 pirata, 55, 62, 63, 64, 67-68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, mertensiae, 4 79, 80, 81, 82, 84, 85, 86, 87, 88-90, milii, 242 92, 93 mylini, 4

Phytomyza (continued) Platynus (continued) nepetae, 4 araizai, 178 nigra, 224 (Rhadine) araizi, 189 nilssoni, 230, 231 atratus, 173, 174, 189 obscurella, 6, 239 baroni, 181, 189 oenanthes, 222 bicolor, 173, 174, 189, 192 osmorhizae, 4, 220 bilimeki, 189 pastinacae, 219, 220, 221, 222, 223, biovatus, 181, 189-190, 210 225, 226, 240, 245 boneti, 178 pauliloewi, 232, 233 (Rhadine) boneti, 190 polycladae, 221, 222, 232 brachyderus, 187, 190 brullei, 179, 190 Ringdahli, 243 riparia, 220 brunneomarginatus, 192 sehgali, 4 brunnipennis, 190, 199 selini, 232, 233, 240 caeruleomarginatus, 187, 190 sii, 222 caeruleus, 177, 190-191 silai, 232, 233, 240 cavatus, 176, 191 sitchensis, 3, 4, 5, 6, 7, 8, 9, 10, 11, 220 chalcopterus, 191 sphondyliivora, 221, 222, 227, 246 championi, 173, 174, 180, 191, 195, 207 spondylii, 219, 222-223, 224, 226, chaudoiri, 183, 191, 210 227, 228, 229, 230, 240 chevrolati, 191 spondylii heracleiphaga, 220, 222, 224, chihuahuae, 180, 191 225, 230, 245, 251 (Hemiplatynus) chihuahuae, 191-192 spondylii spondylii, 221, 224-225 chloreus, 173, 174, 192, 202 tlingitica, 219, 220, 221, 222, 227colibor, 173, 174, 183, 189, 192, 209 228, 246, 250, 251 columbinus, 177, 178, 192 Phytomyzinae, 243 concisus, 173, 174, 186, 189, 192, 206, Picea glauca, 58 211 Pieridae, 47 conicicollis, 177, 182, 192 Pimpinella, 238 consularis, 185, 192-193, 195 Pinus sylvestri, 366, 370 convexulus, 177, 192 Plath, O. E., 132, 135, 137, 144 cordatus, 186, 193 crossomerus, 193 Platymetopus flavilabris, 264 Platynella, 173, 174, 189, 199, 203, cupripennis, 173, 174, 184, 188, 193, 194, 214, 215 202 Platynidius, 175 curtipennis, 173, 174, 193 Platyninae, 216 cyanides, 181, 194 Platynus, 173-214, 216 cyanipennis, 173, 174, 194 acuminatus, 176, 187-188, 191 cycloderus, 173, 174, 177, 194, 207, 212, acutulus, 187, 188 214 aeneicauda, 192, 198 decentis group, 177, 179, 185, 192 (Trapezodera) aeneicauda, 182, 188 delicatulus, 177, 194 aeguinoctialis, 186, 188, 193, 211 deyrollei, 180, 194 agilis, 173, 174, 176, 188, 197, 198 dilutus, 187, 194-195 amplicollis, 184, 188-189 districtus, 205 anchomenoides, 189 (Platynella) districtus, 176, 195 angulosus, 185, 189 dominicensis, 183, 195 aphaedrus, 177, 189 durangensis, 180, 195, 213 approximatus, 189 ebeninus, 185, 195

Platynus (continued) erythrocerus, 181, 195 euides, 173, 174, 195 euprepes, 195 (Rhadine) euprepes, 178, 195-196 evanescens, 196 falli, 179, 196, 210 femoralis, 177, 196 forreri, 180, 196 fragilis, 173, 174, 196 fratellus, 173, 174, 184, 196-197, 198, 213 funestus, 197 gracilis, 187, 197 guatemalensis, 197 guerrerensis, 173, 174, 197 haptoderoides, 185, 197 harfordi, 173, 174, 197 harpaloides, 179, 197, 206 hondurae, 173, 174, 197 hypolithos group, 176, 178 ilagis, 173, 174, 187, 188, 197-198 incommodus, 173, 174, 198 infidus, 173, 174, 198 inops, 182, 188, 192, 198 iricolor, 181, 198, 208 ialapensis, 173, 174, 198 key, 176-187 laetiusculus, 187, 197, 198 larvalis group, 178 leptodes, 198 (Rhadine) leptodes, 178, 198 lifragis, 173, 174, 187, 196, 198 limbicollis, 186, 198-199 logicus, 179, 182, 199 longiceps, 173, 174, 199, 201 (Colpodes) longiceps, 200 longipes, 178, 199 lucilius, 177, 199 lugens, 180, 189, 190, 199, 202 lymphaticus, 173, 174, 200 lyratus, 173, 174, 185, 200, 206 lyrophorus, 184, 188, 200 macrous, 184, 200, 109 marginatus, 212 marginicollis, 179, 200 medellini, 178 (Rhadine) medillini, 200

megalops, 173, 174, 177, 199, 200-201

Platynus (continued) melanocnemis, 177, 201 meridanus, 201 metallicus, 183, 191, 201 minimus, 180, 201 moestus, 173, 174, 180, 193, 197, 199, 201-202, 204, 213 monachus, 173, 174, 179, 182, 192, 202 (Platynella) montezumae, 176, 202 morelosensis, 173, 174, 202 nebrioides, 173, 174, 202 neglectus, 202 niger, 183, 202, 207 nitidus, 173, 174, 179, 182, 185, 198, 199, 202-203, 206, 211 nugax, 173, 174, 185, 200, 202, 203, 210 nyctimus, 179, 203 obscurellus, 173, 174, 186, 189, 197, 198, 203-204 obscurus, 185, 186, 204 olivaceus, 187, 204 omaseoides, 176, 204 opacus, 204 orbicollis, 181, 204-205 ovatellus, 205, 209 ovatulus, 183, 205 ovipennis, 176 ovipennis group, 176, 178 pallidipes, 176, 205 parviceps, 205 pectoralis, 184, 187, 205 pelaezi, 178 (Rhadine) perlevis, 178, 205-206 petilus, 173, 174, 206 phaeolomus, 181, 206 picicornis, 183, 206 pinalicus, 173, 174, 206 planicollis, 206 platysmoides, 179, 206 porrectus, 177, 182, 192, 206 pristonychoides, 180, 206, 208 procephalus, 173, 174, 181, 191, 193, 197, 207 profundus, 185, 207 prolongatus, 173, 174, 207 pterostichoides, 179, 185, 207 punctatostriatus, 202, 207 purpuratus, 186, 191, 207 purulensis, 184, 207-208

Platynus (continued) Platynus (continued) quadrilaterus, 181, 198, 208 validus, 186, 213 recticollis, 173, 174, 208 variabilis, 173, 174, 186, 193, 197, 213, rectilineus, 173, 174, 206, 208 (Anacolpodes) rectilineus, 180 veraecrucis, 207 reflexicollis, 186, 208 (Mexisphodrus) veraecrucis, 182, 214 reflexus, 184, 208 versicolor, 173, 174, 214 robustus, 184, 208 violaceipennis, 186, 214 rotgeri, 178 Pleistocene, 394, 395, 407, 408, 410, 411, 412, (Rhadine) rotgeri, 209 413, 414, 415, 416, 417 rubidus, 187, 209 Pliocene, 386, 395, 401, 410, 411, 412, 415, ruficornis, 184, 209 416 rufiventris, 177, 209 Plumb, G. H., 55, 97 rufulus, 209 Poa annua, 318 scabricollis, 183, 209 Podalonia, 13, 20, 26, 30 segregatus, 179, 196, 209-210 luctuosa, 15, 26 semiopacus, 177, 181, 189, 190, 193, robusta, 15, 21, 26 210 Podonominae, 387, 420 severus, 181, 182, 210 pollen, 140, 141, 143, 145 sexfoveolatus, 186, 210 pollination, 144 sexpunctatus, 210 flower, 143 simplicior, 173, 174, 210 Polyderis, 392 sphodroides, 180, 210 Polygonum viviparum, 117, 136 spinifer, 181, 210 pompilid, 13, 20 stenos, 173, 174, 211 Pompilidae, 13, 34 steropoides, 180, 211 Pontania, 70 striatopunctatus, 184, 211 pacifica, 96 stricticollis, 178, 211 pomum, 61 subauratus, 187, 211 poplar, 96 subcvaneus, 186, 188, 211 Populus, 61, 86 suffectus, 173, 174, 211 balsamifera, 58 tenuicollis, 173, 174, 175, 177, 189, deltoides, 96 211-212 tremuloides, 58 tenuicollis group, 177, 179 Porsild, A. E., 117, 144 tenuicornis, 177, 194, 212 Powell, J. M., 118, 131, 135, 144 teter, 181, 182, 212 Powell, J. S. (see Elliot, D. H.), 388, 422 tinctipennis, 182 Pratt, D. (see Dubach, P.), 32 tlamayensis, 185, 212 Progonochaetus, 267, 268, 274, 276, 277, 279, (Platynella) tolucensis, 176, 212 340-342, 393, 394, 405, 406, 435, 440, 443, transfuga, 179, 181, 189, 212 473, 478 transversicollis, 173, 174, 184, 213 aeruginosis, 342 trifoveolatus, 185 angolanus, 342 trifoveolatus group, 179, 185 approximatus, 342 tristis, 213 arnoldi, 342 trujilloi, 173, 174, 213 atrofuscus, 342 umbripennis, 189 bamboutensis, 342 (Stenoplatynus) umbripennis, 180, 213 basilewski, 267, 268, 342 unilobatus, 173, 174, 213 bicoloripes, 342 valens, 180, 195, 213 brittoni, 342

Progonochaetus (continued) Pseudaplocentrus, 267, 268, 282, 376, 377, caffer, 342, 467 396, 406, 436, 441, 444, 473 chevalieri, 342 Pseudhexatrichus, 267, 268, 277, 282, 349, colmanti, 342 352-353, 396, 398, 404, 405, 424, 441, cursorius, 342 444, 473 Pseudodichirus, 268, 269, 283, 351, 354, 396, decorsei, 343 dilatatus, 342 398, 404, 405, 435, 441, 444, 473 discrepans, 342 intermedius, 351 emarginatus, 342 Pseudognathaphanus, 282, 341, 342, 344-345, inchoatus, 342 394, 395, 405, 406, 435, 440, 443, 473 incrassatus, 342 dekkanus, 344 exaratus, 344 jeanneli, 276, 277, 343, 467 kafakumbae, 342 festivus, 344 kapangae, 342 laevistriatus, 342 laeticolor, 342 perrieri, 345 laevistriatus, 342, 394, 467 punctilabris, 344 limbatus, 342 rufitactor, 344 longesulcatus, 342 rusticus, 344 zabroides, 345 merus, 342 moestus, 342 Pseudomorphini, 421 nigricrus, 342 Psilidae, 254 obtusus, 342 Psithvrus, 138 ochropus, 341, 343 Psyllidae, 74 piceus, 342 psyllids, 24 planicollis, 342 Pteromalidae, 55, 62, 75, 96 prolixus, 342 Pterostichine, 175 pseudochropus, 341, 343 Pterostichini, 35, 40 rudebecki, 342 Pterostichus, 35, 40, 216, 275, 466 sakalava, 342 adoxus, 35, 36, 37, 38, 39 seyrigi, 342 (Haplocoelus) adoxus, 35-39 rejectus, 35, 36, 38, 39 straneoi, 342 subarcuatus, 35, 36, 39 subcupreus, 342 sufflatus, 35, 36, 39 vagans, 342 xanthopus, 341, 342 sustentus, 35, 36, 39 tetricula, 35, 36, 39 Prosoplasmic galls, 56 Prostomoxys saegerae, 255 tristis, 35, 36, 37, 38, 39 Protognathus, 344 zephyrus, 35, 36, 39 perrieri, 344, 345 Puel, L., 350, 351, 352, 354, 425 Putzeys, J. A. A. H., 296, 322, 342, 349, 425 zabroides, 344, 345 psenine wasps, 34 Pyrobombus, 126, 143 Quendenfeldt, G., 342 Psenini, 24-25 Pseudamphasia, 282, 379, 397, 398, 406, Quensel, C., 380, 381 441, 444, 473 Quercus, 56 Pseudanisodactylus, 267, 268, 277, 284, Quinlan, J. (see Eady, R. D.), 58, 96 351-352, 396, 404, 441, 444, 473 Ragodactylus, 321 Pseudanisotarsus, 267, 268, 276, 277, Ranunculus sulphureus, 117 280, 290-292, 390, 406, 435, 440, trichophyllus, 117 Rasnodactvlus, 341, 342, 343 443, 472 jeanneli, 267, 268, 341, 342, 343 nicki, 291, 467, 472

Raven, P. H., 409, 411, 425 ruby-tailed wasp, 32 red-clover, 141, 143 Rydén, N., 229, 230, 231, 235, 238, 240, Redtenbacher, L., 288, 425 243 Reiche, L., 207, 217, 340 Sagraemerus, 288, 289 Rey, C. (see Mulsant, E.), 339 javanus, 288 Rhadine, 173, 175, 192, 196, 198, Salix, 16, 21, 58, 86, 120, 129, 313 206, 214, 215 arctica, 117, 119, 122, 136, 137, 156 perlevis, 205 lasiolepis, 96 Rhagionidae, 254 Salomonsen, F. (see Freuchen, P.), 117, 127, Rhagodactylus, 322 134, 142 brasiliensis, 321, 322 Salt, R. W., 32, 34 Rhantus, 109 Sanicula, 232 notatus, 109 elate var. chinensis, 232 plebeius (= binotatus), 109 Sarcophaga rapax, 30 sinuatus, 109 Sasakawa, M., 220, 232, 235, 236, 243, 244 suturellus (= wallisi), 109 Satophagidae, 254 tostus, 109 Satyridae, 47 zimmermanni (= suturellus), 109 Savage, J. M., 408, 425 Rhodites, 58, 95, 97 Savile, D. B. O., 115, 116, 117, 127, 134, 135, rosae, 95, 96 145, 147 Rhopalosiphum rhois, 25 sawflies, 26 Rhysopus, 276, 277, 282, 347, 394, Saxifragaceae, 8, 242 395, 398, 399, 404, 435, 441, 443, Saxifraga, 129 473 hirculus, 117 klynstrai, 347 nivalis, 117 Ribes lacustre, 58 oppositifolia, 119, 122, 131, 136, 137, Richards, K. W., 31, 34, 115-157 156 Richards, O. W., 115, 116, 134, 137, rivularis, 117 138, 144 tricuspidata, 136, 156 Riodinidae, 47 Say, T., 40, 295, 298, 299, 313, 350, 357, Robineau-Desvoidy, J. B., 224, 226, 358, 364, 366, 375, 376, 378, 379, 380, 243 425 robustella group, 242 Scaphinotus, 419 Rohdendorf-Holmanová, E. B., 235, petersi, 419 238, 243 Scaritini, 427 Rohwer, S. A., 58, 97 Schaeffer, C., 200, 217, 349, 350, 357, 361, Rosa, 16, 21, 56, 58, 61, 67, 68, 97 425 acicularis, 55, 58, 60, 61, 66, 86, 92, Schauberger, E., 290, 344, 346, 350, 351, 94, 97 352, 425, 426 arkansana, 61 Schaum, H., 339, 426 californica, 58 Schizogenius, 382, 427 woodsii, 58, 61, 94 Scholander, P. F., 32, 34 Rosaceae, 55, 56 Schröder, D., 61, 65, 66, 67, 97 Rosales, 56 Schwarz, I., 134, 145 rose galls, 95 Sclater, P. L., 403, 426 gall wasp, 97 Scullen, H. A., 21, 28, 34 Ross, H. H., 409, 425 Scutopterus, 109 Scybalicus, 276, 280, 339-340, 390, 393, 394, royal jelly, 145 Rubus, 24 398, 404, 405, 435, 440, 443, 472, 476

Scybalicus (continued) biroi, 340 hirtus, 277, 340, 467 kabylianus, 340 oblongiusculus, 340, 469, 470 Scymnus, 42 Sehgal, V. K., 4, 8, 220, 226, 240,

244 Selander, R. B., 329, 334, 335, 337,

426 Selenophori, 263, 278

Selenophorus aeruginosus, 342 lugubris, 347

Senecio, 8, 242 Senecioneae, 8, 242 Sericoda, 174, 175

Sericoda, 174, 175 Seseli, 238

Severin, H. C. (see Young, F. N.), 110, 114

Shamsuddin, M., 166Sharplin, C. D. (see Hocking, B.), 31, 33, 127, 131, 143

Shorthouse, J. D., 55-94, 97 (see Kevan, P. G.), 31, 33

Shuel, R. W., 135, 145 Silene acaulis, 136, 137

Silvius, 166

Simpson, G. G., 270, 384, 426 Simulium, 255

Sitona hispidula, 28

Skorikov, A. S., 116, 145 Sladen, F. W. L., 116, 117, 12

Sladen, F. W. L., 116, 117, 121, 122, 127, 132, 134, 135, 145

Sloane, T. G., 289, 290, 296, 426

Smirnovia tristis, 278

Smith, A. G., 384, 389, 392, 410, 413, 426

Smith, A. V., 32, 34

Smith, F. (see Dubach, P.), 32

Smith, H. S., 62, 97

Solenius producticollis, 30

Solidago, 29, 58 Solier, A. J. J., 339

solitary bee, 34 solitary wasps, 13-32, 33, 34

Sømme, L., 32, 34

Sønderup, H. P. S., 235, 240, 244

Sørensen, T., 135, 145

Spärck, R. (see Braendegaard, J.), 116, 140

Sparre-Schneider, J., 134, 145

Spencer, K. A., 4, 8, 220, 222, 223, 224, 225, 226, 227, 229, 230, 234, 238, 240, 244 (see Hering, E. M.), 225, 240, 242

Sphagnum, 165

sphecid fauna distribution patterns, 30-32

sphecid wasps, 13, 20, 21, 22, 27, 30-32

Sphecidae, 13-32, 33, 34

Sphecinae, 25-26

Sphingidae, 26

spider wasps, 22

Spongopus, 283, 374-375, 396, 406, 435, 441, 444, 473

Spooner, G. M., 24, 25, 34

spruce, 16

-jackpine, 22

Starý, B., 235, 244

Steiner, A. L., 13-32, 34

Stellaria longipes, 136, 137, 156

Stenocnemus, 173, 188, 214

chevrolati, 188 versicolor, 194

Stephens, J. F., 351, 353

Sternlicht, M., 62, 97

Stewart, C. M. (see Dubach, P.), 32

Stilbolidus, 295 aztecanus, 320, 321

stink bugs, 22

Stomoxyine, 255

Stomoxys, 255

calcitrans, 255 ochrosoma, 255

Strand, E., 116, 138, 145

Straneo, S. L., 174, 217

Stratiomyidae, 254

Straton, C. R. (see Alder, H.), 66, 95

Strickland, E. H., 23, 24, 26, 27, 28, 29, 30, 34, 161, 163, 166

Sturm, J., 342

Subterraneobombus, 126, 142

sumac, 25

Swales, D. E., 116, 134, 145

Swan, L. A., 41

Symphoromyia, 30

Synergus, 62

reinhardi, 68, 88

Syrphidae, 254

Syrphus ribesii, 29

Tabanid, 166

Tabanidae, 161-171 Trapezodera (continued) Tachinidae, 254 aeneicauda, 188 tachvine, 392 Trechini, 386 Tachysphex, 13, 20, 23-24, 30, 33 Triassic, 388 aethiops, 14, 20, 21, 23, 31 Trichotichnus, 264 quebecensis, 14, 24, 31 Triggerson, C. J., 62, 98 terminatus, 14, 20, 24, 31, 33 Trimerotropis, 23 Tachytini, 23-24, 31 Triplectrus, 354, 355, 356 Taketani, A. (see Yasumatsu, K.), 65, aethiops, 369 66, 87, 88, 92, 98 beryllus, 360 Tanaka, K., 345, 346, 347, 350, 351, breviceps, 364 426 convexus, 366 Tanner, V. M., 275, 426 kempi, 369 Tanno, K., 32, 34 longicollis, 364 Taschenberg, O. (see Hevne, A.), 190 marginatus, 369 Tauber, C. A. (see Tauber, M. J.), 225, modicus, 362 230, 244 oblongus, 365 Tauber, M. J., 225, 230, 244 ovularis, 372 Tecnophilus, 423 paulus, 359 Tenthredinidae, 61, 96 peropacus, 363 Tephritidae, 74 semirubidus, 372 Tertiary, 387, 388, 389, 390, 392, 393, sulcipennis, 369 395, 397, 410, 411, 412, 415 wolcotti, 369 Triplosarus, 280, 285-286, 389, 405, 435, Tetrastichus rosae, 62 tetrigids, 20, 24 440, 443, 472 Tettigoniidae, 33 fulvescens, 285, 286 Thawley, A. R., 135, 145 novaezealandiae, 286 thecodont reptiles, 388 Trypanosoma evansi, 255 Thenarellus, 279 Tryxalus, 24 Tschitscherine, T., 276, 345, 346, 353, 426 therapsid reptiles, 388 Theridiidae, 23 Tussilago, 8, 242 Thermonectes, 111 Tutin, T. G., 220, 244 ornaticollis, 111 Umbelliferae, 3-8, 219-253 Thomas, A. W., 161-171 United States Department of Agriculture, 426 Thyanta, 23 Urarus, 102 Tipulidae, 254 Urbahns, T. D., 75, 98 Tomenthyonum nitens, 120 Urophora jaceana, 74, 98 Torre-Bueno, J. R., 274, 426 Ursprung, H., 43 Torymidae, 55, 62 Ushatinskaya, R. S., 32, 34 torymids, 74 Uvarov, B. P., 31, 34 Torymus, 63, 74 Van Dyke, E. C., 209, 217 Varley, G. C., 71, 74, 75, 79, 98 bedeguaris, 55, 62, 63, 65, 70, 73, 74-75, 76, 77, 78, 79, 80, 81, 82, 84, 85 Vaurie, P. (see Selander, R. B.), 329, 334, 335, cvanimus, 74 337, 426 vesiculus, 74 vespid, 22 Townes, H. K. (see Muesebeck, C. F. W.), Viburnum edule, 58 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Viereck, H. L., 71, 98 34, 59, 62, 67, 97 vilis group, 113 Trapezodera, 188 Virostek, J. F. (see Hobbs, G. A.), 132, 143

Vogt, P. R. (see Morgan, W. J.), 384, 425

Voigt, G., 235, 244

Wagner, F. von. (see Friese, H.), 117, 126, 127, 138, 142

Wallace, A. R., 403, 404, 405, 406, 426

Wallis, J. B., 99-113, 114

wasps, 32, 33, 34, 145

Weaver, N., 134, 145

weevils, 21, 27, 403

Wehner, R., 257

Weld, L. H., 56, 58, 59, 65, 98

Wells, B. W., 56, 98

Westwood, J. O., 348, 426

Whitehead, D. R., 410, 426, 427

Whitehead, Donald Robert., 173-214, 270, 382, 427

Whittaker, R. H., 94, 98

Wiedemann, C. R. W., 288, 289, 427

Wildner, G. (see Bukatsch, F.), 134, 141

Williams, F. X., 22, 34

willow, 16, 21

Wilson, E. W., 390, 427

Wingstrand, K. G. (see Brinck, P.), 116, 117, 121, 134, 138, 141

Wojtowski, F., 132, 134, 145

Wold, J. L. (see Scullen, H. A.), 21, 28, 34

Wolfe, J. A., 410, 427

Woodwell, G. M., 94, 98

worker caste, 141

Wykes, G. R., 135, 145

Xenophonus, 278

hirtus, 278

Xestonotus, 283, 347-348, 394, 395,

399, 406, 435, 441, 443, 473 *lugubris*, 277, 348, 466, 469, 471

yarrow, 16, 20, 21

Yarrow, I. H. H., 116, 138, 145

Yasumatsu, K., 65, 66, 87, 88, 92, 98

Young, F. N., 101, 102, 110, 114

Zacotus, 419

Zoerner, H., 229, 235, 239, 244

Zumpt, F., 255



